

Application No. 09/992,637

UNMT 1000-1

REMARKS

In the Official Action mailed 13 October 2004, the Examiner reviewed claims 1-33. The Examiner objected to the Abstract. Also, the Examiner rejected claims 29-33 under 35 U.S.C. §101; rejected claims 24-27 and 29-33 under 35 U.S.C. §112, second paragraph; rejected claims 1, 2, 4, 5, 9-13, 15, 16, 20-23 and 25-32 under 35 U.S.C. §103(a); rejected claims 6-8, 17-19, 24 and 33 under 35 U.S.C. §103(a); and rejected claims 3 and 14 under 35 U.S.C. §103(a).

Applicant has amended claims 1, 11, 12, 22, 23-27, 29 and 32. Claims 1-33 remain pending.

The Examiner's objection and rejections are respectfully traversed below.

Objection to the Abstract

The Examiner has objected to the Abstract. Applicant has revised the Abstract, as set forth above to remove the offending language.

Accordingly, reconsideration of the objection to the Abstract is respectfully requested in view of the amendment.

Rejection of Claims 29-33 under 35 U.S.C. §101

Claims 29-33 are rejected under 35 U.S.C. §101 as lacking patentable utility. Applicant has amended independent claim 29 to emphasize that the method applies to operation of a data processing engine. Therefore, the claims now clearly recite a process patentable under 35 U.S.C. §101, directed to use of a machine, and having utility in efficient operation of a machine for data processing. Claims 30-33 depend from claim 29 as amended, and meet the requirements of 35 U.S.C. §101 for the same reasons.

Accordingly, reconsideration of the rejection of claims 29-33 as amended is respectfully requested.

Rejection of Claims 24-27 and 29-33 under 35 U.S.C. §112, second paragraph

Claims 24-27 and 29-33 are rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Applicant has amended such claims to address the Examiner's concerns.

Accordingly, reconsideration of the rejection of claims 24-27 and 29-33 as amended is respectfully requested.

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Rejection of Claims 1, 2, 4, 5, 9-13, 15, 16, 20-23 and 25-32 under 35 U.S.C. §103(a)

Claims 1, 2, 4, 5, 9-13, 15, 16, 20-23 and 25-32 are rejected under 35 U.S.C. §103(a) as being unpatentable over Frank J. Derfler, et al. (How Networks Work, Millennium Edition, Que Corp., Indianapolis, IN, Sep. 2000, hereafter referred to as "Derfler") in view of Douglas E. Comer (Internetworking with TCP/IP, Volume I, 2nd Edition, Prentice Hall, Englewood Cliffs, NJ, © 1991, hereafter referred to as "Comer."

The Examiner has interpreted the claims as filed in a manner not intended by Applicant. In particular, the Examiner has read the claims on a basic communications network, rather than an architecture for a data processing system as described in the present specification. Accordingly, Applicant has amended the independent claims 1, 12, 23 and 29, as set forth above to more clearly recite the invention, without loss of scope. As described in the application, a new hardware architecture for a data processing system is provided by the present invention. Plural functional units operate on data routed among them, based on routing control signals distributed in parallel to the functional units during a function cycle.

With regard to claim 1, the Examiner relies on Derfler's client PCs to act as the functional units, and routers on a communication network to act as the routing units. The Examiner acknowledges that Derfler does not teach "the routing control signals..." nor the "control word logic..." The Examiner relies on Comer to teach these limitations in claim 1. In particular, the Examiner relies on the TCP/IP header format to teach "control word logic." The header is a control word carried with data packets in a TCP/IP network. It is not "logic" as described herein. Nonetheless, Applicant has amended the phrase "control word logic" to read "control word distribution circuitry" for distributing the routing control signals in parallel (i.e., as a control word) to the routing units, and to read that the routing control signals establish routes for function cycles in the plurality of functional units. This clarification plainly distinguishes the claims over computer networks running on TCP/IP or other protocols.

In the network communications systems described by Derfler and Comer, there is no structure similar to the control word distribution circuitry. Rather, the data packets are routed essentially in serial fashion in the networks, and the packets carry their own routing control information. Furthermore, the packets, and the routing information in their respective headers, are not supplied in parallel to routers in such a network. *A priori*, the client PCs do not perform tasks in function cycles using a route defined by a parallel set of routing control signals.

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Claims 2, 4, 5 and 9-11 depend from claim 1 as amended, and are patentable for the same reasons, and because of the unique combinations recited.

Claim 12 has been amended in a manner similar to claim 1, and to correct errors. It is allowable for at least the same reasons as discussed above with respect to claim 1, and because of the unique hierarchical combination recited.

Claims 13, 15, 16 and 20-22 depend from claim 12 as amended, and are patentable for the same reasons, and because of the unique combinations recited.

Independent method claim 23 has been amended as well to clarify the statement of the invention. Claim 23 now literally states that the routing control signals are supplied in parallel to establish a route, and further that the functional units execute using the route. The network systems relied upon by the Examiner do not cause the client PCs, relied upon by the Examiner to meet the functional unit limitation, to perform using a route defined in response to routing control signals supplied in parallel to the routers.

Claims 25-28 depend from claim 23 as amended, and are patentable for the same reasons, and because of the unique combinations recited.

Independent method claim 29 has also been amended to clarify the statement of the invention. In particular, claim 29 now literally requires supplying the routing control signals in parallel, and performing tasks by the functional units. As stated before, the Derfler and Comer references describe standard TCP/IP communication networks, which operate serially and asynchronously. There are no structures for providing control words in parallel to the routers in such systems.

Claims 30-32 depend from claim 29 as amended, and are patentable for the same reasons, and because of the unique combinations recited.

Accordingly, reconsideration of the rejection of claims 1, 2, 4, 5, 9-13, 15, 16, 20-23 and 25-32 as amended is respectfully requested.

Rejection of Claims 6-8, 17-19, 24 and 33 under 35 U.S.C. §103(a)

Claims 6-8, 17-19, 24 and 33 are rejected under 35 U.S.C. §103(a) as being unpatentable over Derfler in view of Comer and further in view of W. Richard Stevens, UNIX Network Programming, Prentice Hall, Englewood Cliffs, NJ, © 1990, hereafter referred to as "Stevens." Stevens is relied upon to suggest combining the client write and read commands with the networking structures on Derfler, and for compiling control words from high level languages.

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Stevens describes a network protocol API for performing read and write functions over a TCP/IP or XNS network, or using the interprocess communication protocol known as UNIX Domain protocol. Stevens does not suggest supplying control words to routing units in parallel for routing data among functional units in a data processing system.

Therefore, it is submitted that claims 6-8, 17-19, 24 and 33 are allowable for at least the same reasons as their respective base claims, and because of the unique combinations recited.

Accordingly, reconsideration of the rejection of claims 6-8, 17-19, 24 and 33 as amended is respectfully requested.

Rejection of Claims 3 and 14 under 35 U.S.C. §103(a)

Claims 3 and 14 are rejected under 35 U.S.C. §103(a) as being unpatentable over Dettler in view of Comer, and further in view of Antonov (US Patent No. 6,044,080).

The Examiner relies upon Antonov to teach the use of a crossbar switch in a network router. Antonov however does not suggest supplying control words in parallel to a plurality of routing units as claimed here. Accordingly claims 3 and 14 are patentable for at least the same reasons as their respective base claims, and because of the unique combinations recited therein.

Accordingly, reconsideration of the rejection of claims 3 and 14 as amended is respectfully requested.

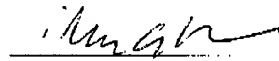
CONCLUSION

It is respectfully submitted that this application is now in condition for allowance, and such action is requested.

The Commissioner is hereby authorized to charge any fee determined to be due in connection with this communication, or credit any overpayment, to our Deposit Account No. 50-0869 (UNMI 1000-1).

Respectfully submitted,

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